

**PELTON TURBINE SYSTEM AND METHOD****ABSTRACT**

[0040] A Pelton turbine is disclosed that includes at least one needle valve injector assembly and at least one high efficiency injector assembly. The high efficiency injector assembly provides a generally unimpeded flow path for water from a distributor to a runner of the turbine. The high efficiency injector assemblies and needle valve injector assemblies are operated in cooperation to provide the overall desired flow rate through the turbine and to increase the efficiency of the turbine. A high efficiency injector assembly may be retrofitted for a needle valve injector assembly to improve the efficiency of existing turbine systems.